

Use Attainability Analysis

for

WBID 0528 Shoal Creek

Submitted by  
Tetra Tech, Inc

To  
Missouri Department of Natural Resources  
Water Protection Program

RECEIVED

Field Data Sheets for Recreational Use Stream Surveys

APR 06 2005

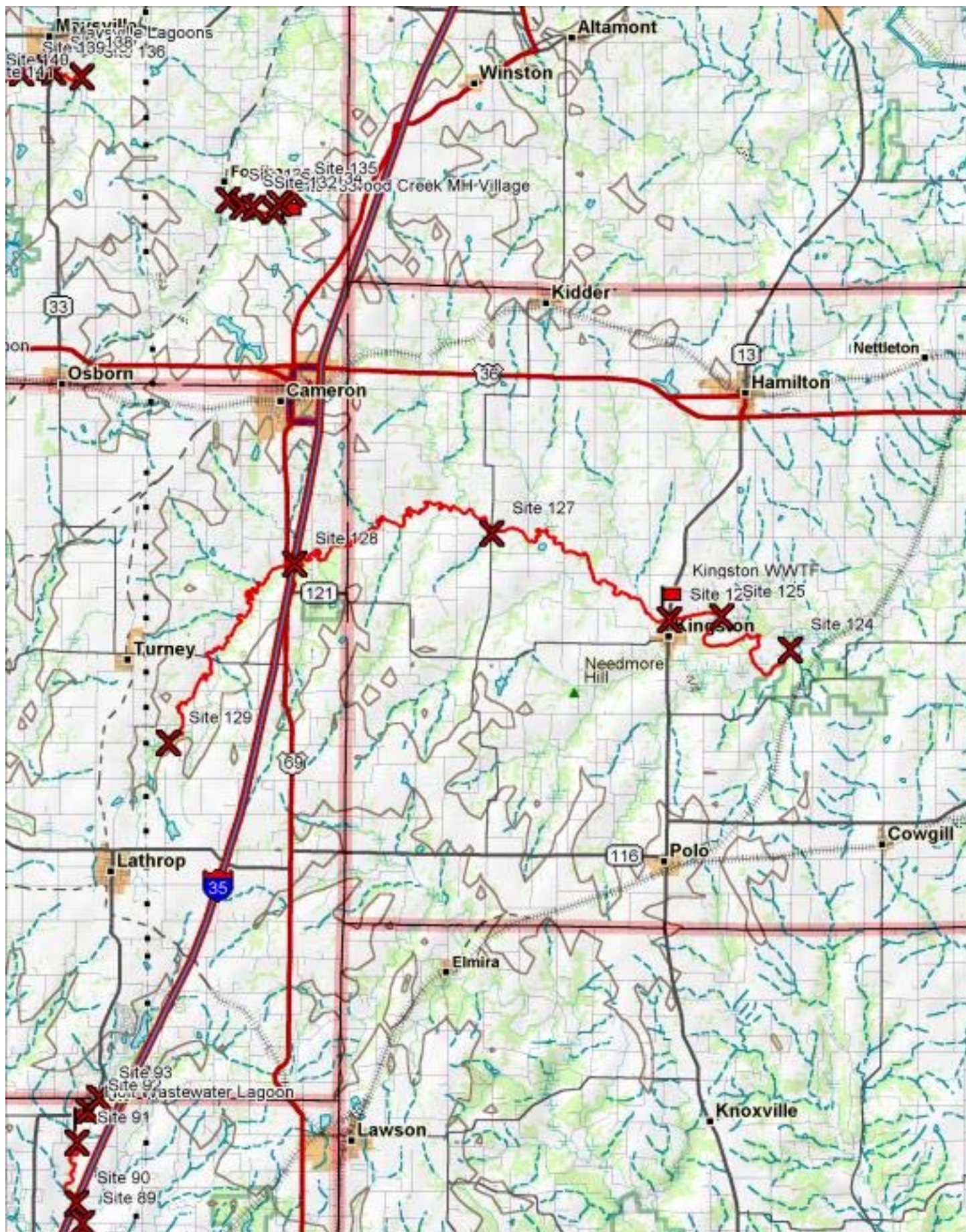
## Data Sheet A - Water Body Identification

WATER PROTECTION PROGRAM

Water Body Name: (from USGS 7.5' quad) SHOAL CREEK! 124-129	
8-digit HUC: 10280101	
Missouri WBID #: 0528	
County: MODOAWAY	
Upstream Legal Description:	
Downstream Legal Description:	
Upstream Coordinates: (UGS 84, ddd.ddddd) 39.60081 -094.28216	
Downstream Coordinates: (UGS 84, ddd.ddddd) 39.64227 -093.91139	
Discharger Facility Name(s): KINGSTON WWTP	
Discharger Permit Number(s): MD-0120405	
Number of Sites Evaluated: 6	
Name of Surveyor and Telephone Number: CHAD BATHOON, 410-356-8993	
Organization: TETRA TECH INC.	
Position: ASSOCIATE SCIENTIST	

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chad Bathoon Date: 03-29-05





## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 124		Site Location Description: BENZANZA RD. OVERPASS.
Site GPS Coordinates: N 39.64227 W 093.99134		
Date & Time: 03-16-05; 1300		Facility Name: KINGSTON DWT
Personnel: CHAD BARBOUR, JENNY ROSEN		Permit Number:
Current Weather Conditions: 44°F, SUNNY		Weather Conditions for Past 7 days:
Photo Ids: Upstream: 1576 B	Downstream: 1577 B	Other:

#### Uses Observed\*:

<input checked="" type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input checked="" type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input checked="" type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input checked="" type="checkbox"/> Trapping	<input checked="" type="checkbox"/> Fishing	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)  
 SPOKE TO LOCAL THAT SAID FRIEND HAS KAYAKED THE RIVER. SITE SURROUNDED BY AGRICULTURE & FOREST.

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

#### Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

JTR - 03-16-05

**Stream Morphology:**

**Upstream View Physical Dimensions:** 0.04, 0.22, 0.4, 0.32, 0.1 m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 5.4m	Length (ft): 20m	Avg. Depth (ft): 0.22m	Max. Depth (ft): 0.4m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m = 5s; 4m = 6s; 4m = 5s	

Flow = 0.30 m/s

**Downstream View Physical Dimensions:** 0.6, 0.3, 0.4, 0.4, 0.45 m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 3.5m	Length (ft): 20m	Avg. Depth (ft): 0.43m	Max. Depth (ft): 0.6m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m = 13s; 4m = 14s; 4m = 13s	

Flow = 0.31 m/s

**Substrate\*:** (These values should add up to 100%.)

40	% Cobble	10	% Gravel	20	% Sand	30	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

NONE
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

[Signature] 03-16-05



## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 125	Site Location Description: AT JAMES NO. OVERPASS.	
Site GPS Coordinates: N 39.65 228 W 094.01112 <sup>Acc. 19.3</sup> Fe.		
Date & Time: 03-16-05: 061340	Facility Name: KINGSTON WWTF	
Personnel: CHAD DANDON, JEREMY ROBEEN	Permit Number:	
Current Weather Conditions: 49°F, SUNNY	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 15780	Downstream: 15790	Other:

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input checked="" type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input checked="" type="checkbox"/> Fishing	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)  
SPoke TO LOCAL WHO SAID THAT FISHED FRIEND OF HIS KAYAKS THE CREEK. AREA SURROUNDED BY AGRICULTURE + FOREST. <sup>CGH</sup>

#### Surrounding Conditions\*:

(Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

STH 03/16/05

**Stream Morphology:**

**Upstream View Physical Dimensions:** 0.52, 0.40, 0.40, 0.40, 0.1m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 11.2m	Length (ft): 20m	Avg. Depth (ft): 0.36m	Max. Depth (ft): 0.52m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=16s; 4m=17s; 4m=17s	

Flow = 0.24 m/s

**Downstream View Physical Dimensions:** 0.1, 0.13, 0.3, 0.43, 0.53.

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 1.8m	Length (ft): 20m	Avg. Depth (ft): 0.24m	Max. Depth (ft): 0.53m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=14s; 4m=12s; 4m=15s.	

Flow = 0.29 m/s

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	40	% Sand	% Silt	10	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

NONE

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: SAND
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chris [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

STR-03-16-05





## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 126		Site Location Description:	
Site GPS Coordinates: N 39.65049 W 094.03260 MO, 43.5		AT ROUTE 13 CROSSING.	
Date & Time: 03-16-05 1245		Facility Name: KINGSTON WWTF	
Personnel: CHAD SANDS; JEREMY NOBEN		Permit Number:	
Current Weather Conditions: 49°F, SUNNY		Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 15810	Downstream: 15800	Other:	

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input checked="" type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input checked="" type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input checked="" type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)  
 SPOKE TO LOCAL PERSON WHO STATED THAT A FRIEND OF HIS KAYAKS THIS CREEK.  
 AREA SURROUNDED BY AGRICULTURE + FOREST.

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

JTR - 03/16/05

**Stream Morphology:**

**Upstream View Physical Dimensions:** 0.40, 0.30, 0.30, 0.34, 0.40 m.

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 4.5	Length (ft): 20m	Avg. Depth (ft): 0.35m	Max. Depth (ft): 2.40m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=95; 4m=16; 4m=125	

Flow = 0.38 m/s

**Downstream View Physical Dimensions:** 0.6, 0.41, 0.22, 0.70, 0.63 m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 4.5m	Length (ft): 20m	Avg. Depth (ft): 0.73 m	Max. Depth (ft): 0.91m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=175; 4m=165; 4m=185	

Flow = 0.24 m/s

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	90	% Sand	% Silt	10	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

MACROHYTES SPARSE THROUGHOUT.

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: SAND
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

ITR - 03/16/05







## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 127	Site Location Description: AT ROUTE D CROSSING	
Site GPS Coordinates: N34.63610 W094.13098 Acc: 38.9 Ft.		
Date & Time: 03-16-05, 1230	Facility Name: KINGSTON WWTF	
Personnel: CHAD BARNHART, JEREMY ROBEEN	Permit Number:	
Current Weather Conditions: 48°F, PARTLY CLOUDY	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1582B	Downstream: 1583B	Other:

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input checked="" type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input checked="" type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input checked="" type="checkbox"/> Fishing C&P	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.) LOCAL PERSON STATED THAT A FRIEND OF HIS KAYAKS THIS RIVER. AREA SURROUNDED BY AGRICULTURE.				

#### Surrounding Conditions\*:

(Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input checked="" type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

JTR 03-16-05

**Stream Morphology:**

**Upstream View Physical Dimensions:**

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>20m</u> *	Length (ft): <u>N/A</u>	Avg. Depth (ft): <u>N/A</u>	Max. Depth (ft): <u>N/A</u>
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): <u>TOO SLOW TO MEASURE; TOO WINDY</u>	

\* - STREAM TOO DEEP TO MEASURE.

**Downstream View Physical Dimensions:**

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>20m</u> *	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): <u>TOO SLOW MEASURING; TOO WINDY</u>	

\* - STREAM TOO DEEP TO MEASURE

**Substrate\*:** (These values should add up to 100%.) N/A TOO DEEP

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

<u>N/A - STREAM TOO DEEP AND TURBID.</u>
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other: <u>N/A</u>
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

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Signed: [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

STR-03-16-05



## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 127-10VJSTT		Site Location Description:	
Site GPS Coordinates: 39.69125 / -94.13118		2 DRYER WIRE D CROCKETS	
Date & Time: 3-18-05 / 8:30am		Facility Name:	
Personnel: AVR, AMG		Permit Number:	
Current Weather Conditions:		Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 20 021694	Downstream: 20 021693	Other:	

#### Uses Observed\*:

<input checked="" type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input checked="" type="checkbox"/> Kayaking/Canoeing	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input checked="" type="checkbox"/> Trapping	<input checked="" type="checkbox"/> Fishing	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

Assumed activities based on location & conditions.  
Mike Murphy stopped to talk.  
  
Mooring rope found.

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input checked="" type="checkbox"/> Other: MURPHY ROPE FOUND				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

AVR - *[Signature]* 3-18-05



**Stream Morphology:**

**Upstream View Physical Dimensions:** 1, 1, .8, .8, .9

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>23m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.9m</u>	Max. Depth (ft): <u>1.1m</u>
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): <u>Too slow to measure</u>	

**Downstream View Physical Dimensions:** .75, .85, .9, .8, .7

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>13m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.8m</u>	Max. Depth (ft): <u>0.9m</u>
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): <u>Too slow to measure</u>	

**Substrate\*:** (These values should add up to 100%.)

<u>20</u> % Cobble	% Gravel	<u>80</u> % Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

<u>None</u>
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Adam Bette Date: 3/18/05

Organization: TC-BT Position: Sec. I.

Marie Huber 3/18/05



## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 128	Site Location Description: AT 61 OVERPASS	
Site GPS Coordinates: N39.67422 W094.23779 <sup>Ad.</sup> 62.4 FL		
Date & Time: 03-16-05, 1200	Facility Name: KINGSTON WWTF	
Personnel: CHAD BARBOUR, JEREMY ROBEEN	Permit Number:	
Current Weather Conditions: 49°F, SUNNY	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1535 D	Downstream: 1534 B	Other:

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.) VERY SHALLOW, NO USES OBSERVED.				

#### Surrounding Conditions\*:

(Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

**Stream Morphology:**

**Upstream View Physical Dimensions:** 0.1, 0.2, 0.53, 0.70, 0.32 m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 5.7m	Length (ft): 20m	Avg. Depth (ft): 0.37m	Max. Depth (ft): 0.70m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=20s; 4m=13s; 4m=15s	

Flow > 0.25 m/s

**Downstream View Physical Dimensions:** 0.1, 0.12, 0.1, 0.03, 0.1 m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 7.5m	Length (ft): 20m	Avg. Depth (ft): 0.29m	Max. Depth (ft): 0.12m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=12s; 4m=12s; 4m=12s	

Flow > 0.33 m/s

**Substrate\*:** (These values should add up to 100%.)

% Cobble	5	% Gravel	70	% Sand	25	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

ALGAE ON ROCKS - VERY SMALL AMOUNT.

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

STR-05-16-05





## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 12A		Site Location Description: AT NE 280TH ST. OVERPASS.
Site GPS Coordinates: N 39.60081 W 094.28246 Acc: 20 Ft		
Date & Time: 03-16-05: 1130		Facility Name: KINGSTON WWTF
Personnel: CHAD BANBACH, JEREMY ROBBEN		Permit Number:
Current Weather Conditions: 47°F, SUNNY		Weather Conditions for Past 7 days:
Photo Ids: Upstream: 1574 B	Downstream: 1575 B	Other:

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input checked="" type="checkbox"/> Trapping COY	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)  
SITE LOCATED IN VERY RURAL AGRICULTURAL AREA.

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: AGRICULTURE	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input checked="" type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

STR 03/16/05

ck

**Stream Morphology:**

**Upstream View Physical Dimensions:** 0.1, 0.1, 0.02, 0.1, 0.1m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 9m	Length (ft): 20m	Avg. Depth (ft): 0.03m	Max. Depth (ft): 0.1m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 1m=4s; 1m=4s; 1m=5s	

Flow = 0.23 m/s

**Downstream View Physical Dimensions:** 0.04, 0.12, 0.11, 0.1, 0.02m

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 3.4m	Length (ft): 20m	Avg. Depth (ft): 0.03m	Max. Depth (ft): 0.12m
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): 4m=35s; 4m=42s; 4m=27s	

Flow = 0.12 m/s

**Substrate\*:** (These values should add up to 100%.)

15	% Cobble		% Gravel	70	% Sand		% Silt	15	% Mud/Clay		% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

None
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 03-16-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

QTR-03/16/05



